ORDER NO. VRD9207M139

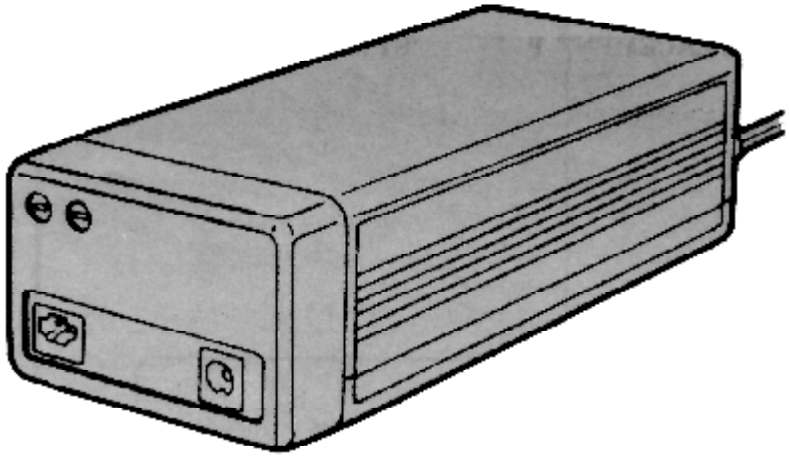
Service Manual

General Description
Adjustment Procedures
Schematic Diagrams
Exploded View / Parts List

Panasonic

AC Adaptor

VW-AM10 E B A Ⓐ



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Panasonic

SPECIFICATIONS

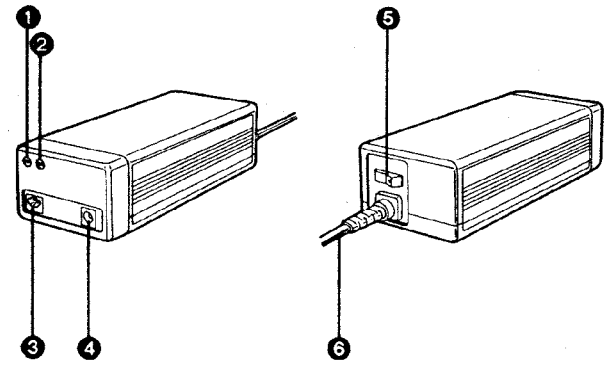
ITEM	SPECIFICATION
POWER	Source: 100~240 V AC 50/60 Hz (Automatic Voltage Adjustment)
	Consumption: 44 watts
	Output: DC 12 V, 1.8 A for VHS Movie DC 12 V, 1.5 A for battery charge
DIMENSIONS	80(W) × 54(H) × 196(D) mm
WEIGHT	Approx. 0.62 kg

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

CAUTION: FOR USE WITH VHS VIDEO MOVIE, MODEL NV-M40, NV-M3000, NV-M3300.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

1. CONTROLS AND COMPONENTS



1. Power Indicator
2. Charging Indicator
3. DC Output Socket
4. Battery Pack Charging Socket
5. Power On/Off Switch
6. Mains Lead

2. DISASSEMBLY METHOD

1. REMOVAL OF TOP CASE AND BOTTOM CASE

(1) Unscrew 4 Screws (A) and then remove the Top Case and Bottom Case.

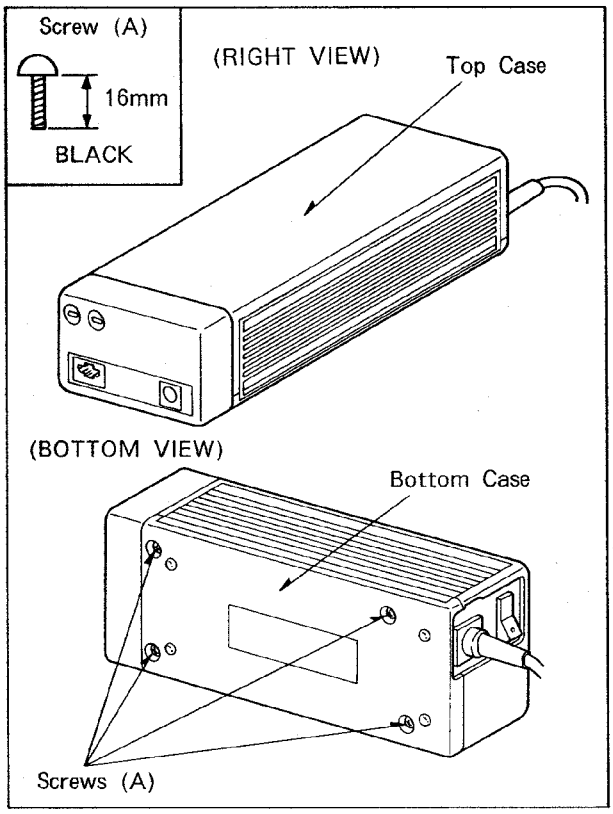


Fig. 1

2. REMOVAL OF FRONT PANEL

(1) Remove the Front Panel dis connecting the connector P1.

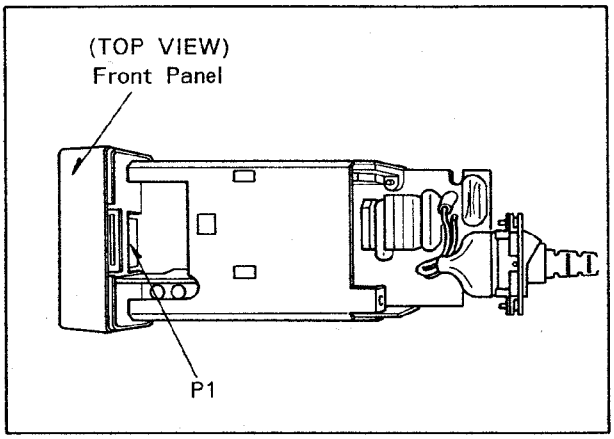


Fig. 2

3. REMOVAL OF MAIN C.B.A.

(1) Unscrew 3 Screws (B) and then remove the Top Shield.
(2) Unscrew the Screw (C) and then remove the Bottom Shield.

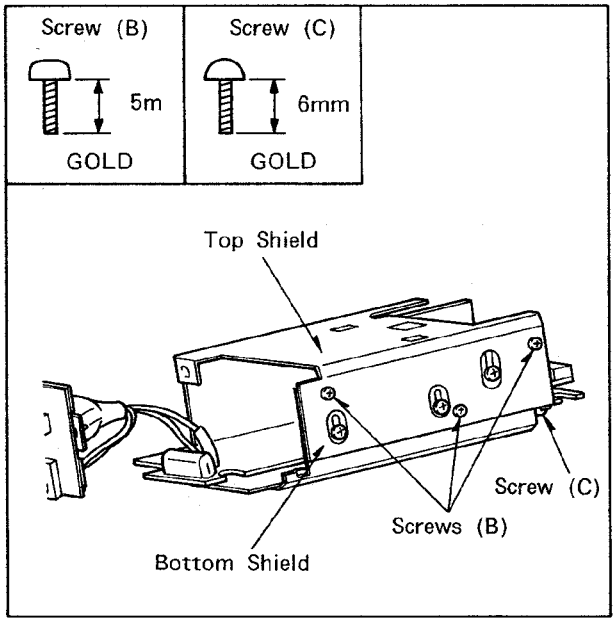


Fig. 3

4. REMOVAL OF FRONT PANEL C.B.A.

(1) Unscrew 2 Screws (D).
(2) While pushing 2 Portions of the DC Output Socket and the Battery Pack Charging Socket, Remove the Front Panel C.B.A.

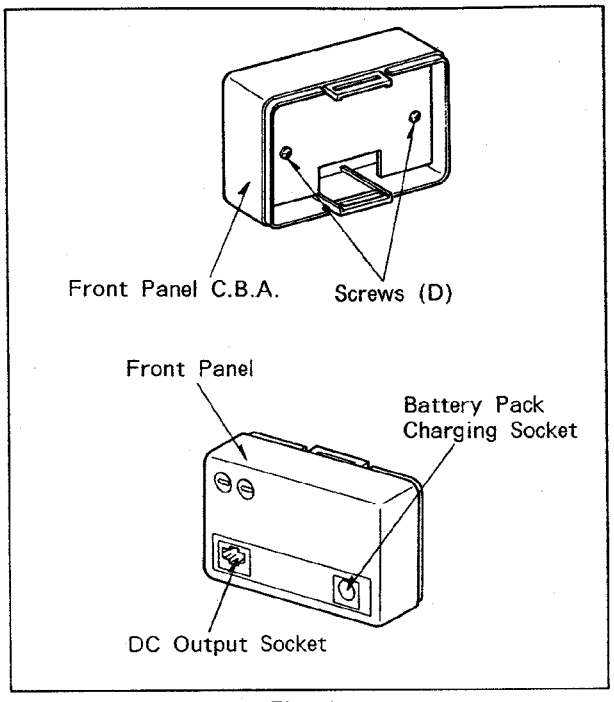


Fig. 4

3. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete electrical adjustment procedures which may be required for electronic circuit of the AC Adaptor.

3-1. TEST EQUIPMENT

To perform the electrical adjustments completely following equipments are required.

1. D.V.M. (Digital Volt Meter)
   Voltage Range : 0.001~50V
2. Oscilloscope
   Voltage Range : 0.005~50V/div
3. DC Ammeter
   Current Range : 0~10A
4. DC Voltmeter
   Voltage Range : 0~20V
5. Plastic Tip Driver
6. Resistor (5ohm Variable 200W)
7. DC Power Supply (5A/20V)

3-2. INITIAL CHARGE CURRENT AND SCHMITT VOLTAGE ADJUSTMENT

TP	ADJ.	MODE	INPUT
BATTERY HOLDER (+) (−)	VR101	CHARGE	
TAPE	**M. EQ.**	**SPEC.**	
	DC AM/ D.V.M.	A=1.5+−0.005[A] From Low to High	

1. Make the connection as shown below.

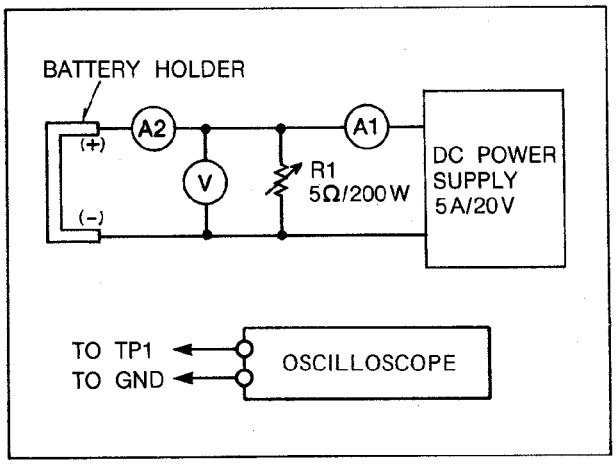
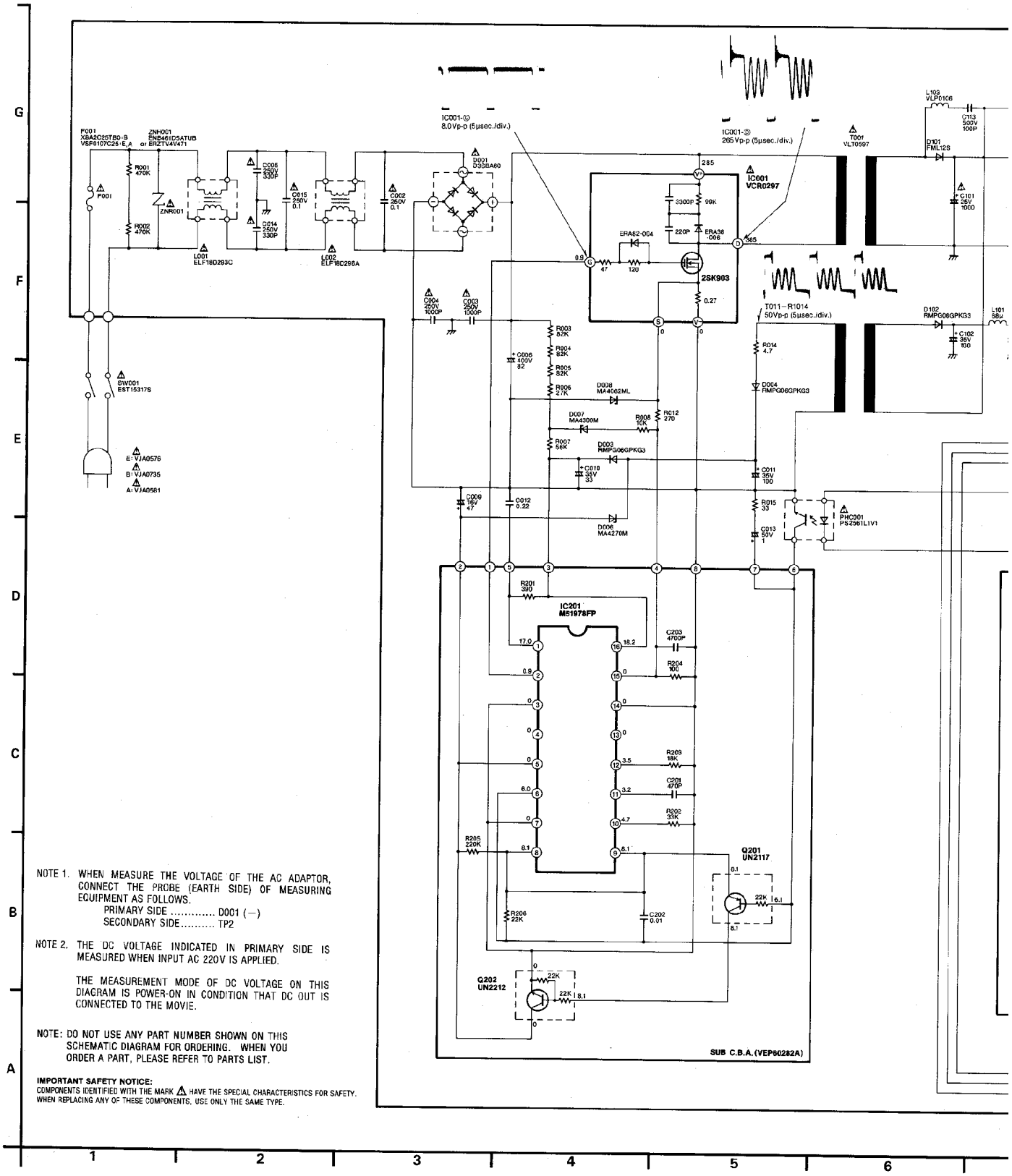


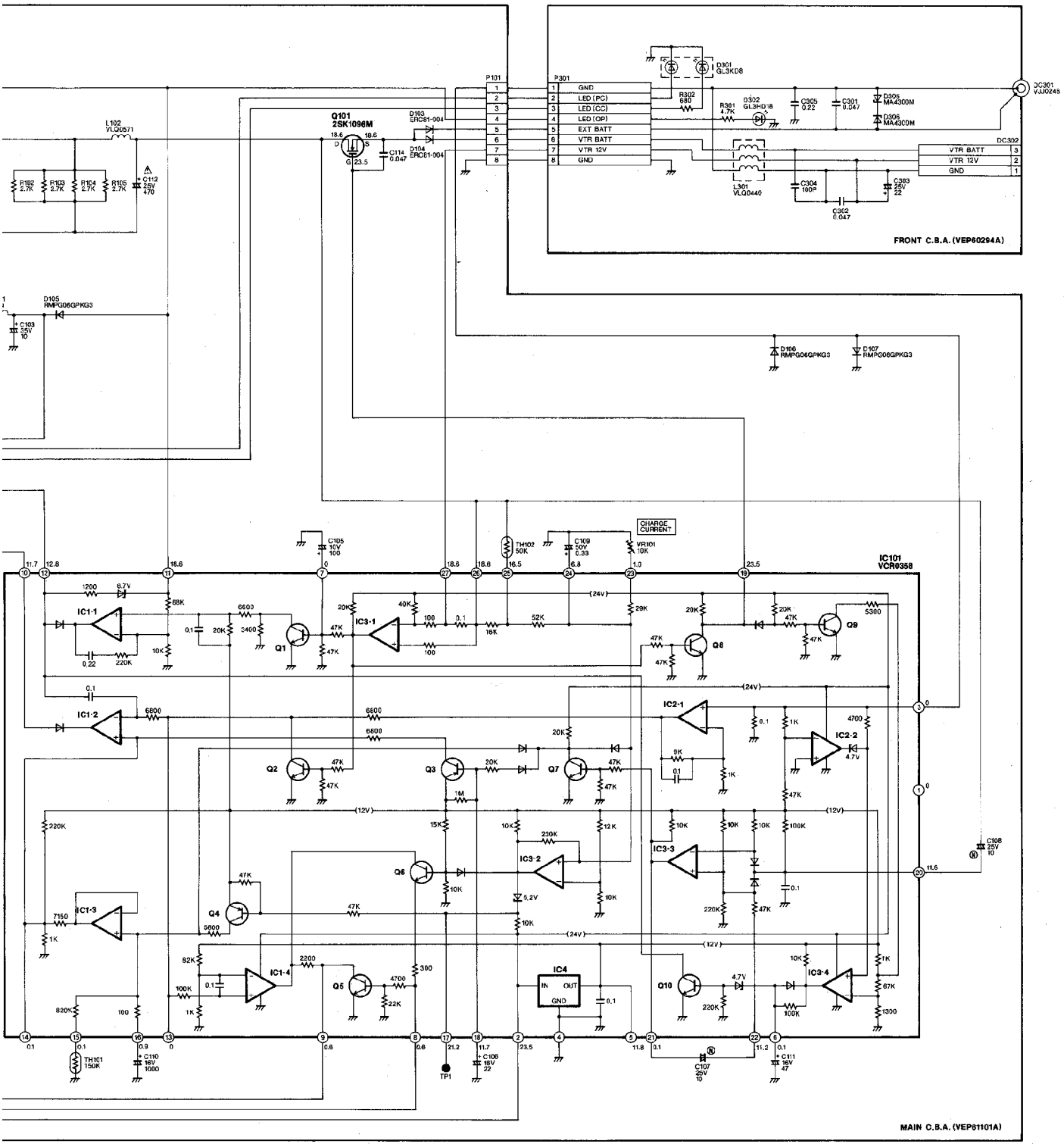
Fig. 5

2. Turn the VR101 to fully clockwise.
3. Adjust the output of the DC power supply so that the indication of the DC voltmeter becomes 14.0V and adjust R1 so that the indication of the DC ammeter (A1) becomes 3.0A
4. Check the DC ammeter (A2), DC ammeter (A2) should be 1.5±0.5A.
5. Adjust the output level of the DC power supply to 16.2V.
6. Adjust the VR101 so that voltage at TP1 is changed from Low (approx. 8V) to high (approx. 15V).

It is also available to use a resistor 5ohm/50W or 2 pieces of 10ohm/20W resistors inparallel use or equevalent, instead of variable resistor, 5ohm/200W to get specified current.

5. AC ADAPTOR SCHEMATIC DIAGRAM

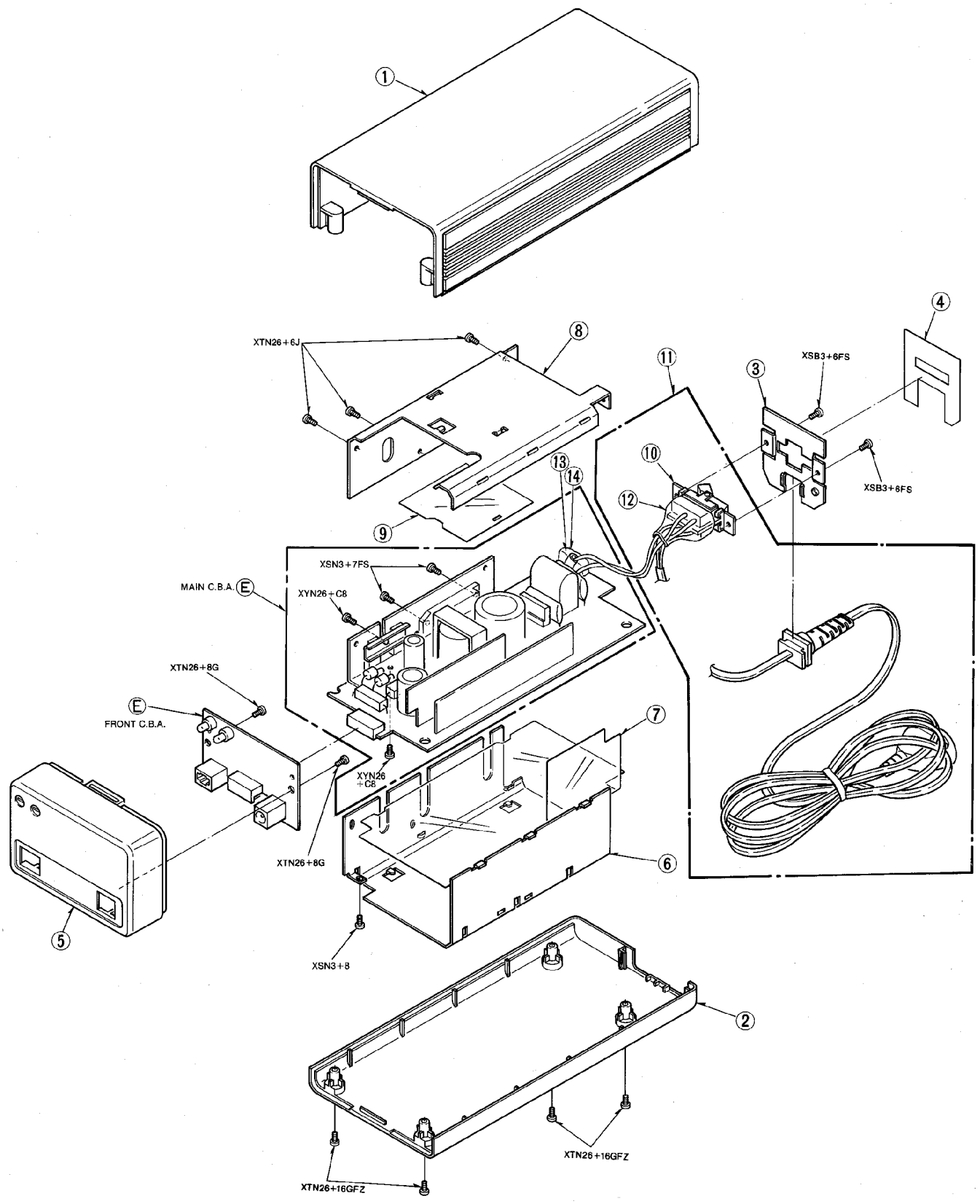

IC001-⑯ 8.0Vp-p (5μsec./div.)
IC001-⑮ 265Vp-p (5μsec./div.)
T011–R1014 50Vp-p (5μsec./div.)
IC201 M51978FP
IC601 VCR0297
2SK903
Q201 UN2117
Q202 UN2212
SUB C.B.A.(VEP60282A)
NOTE 1. WHEN MEASURE THE VOLTAGE OF THE AC ADAPTOR, CONNECT THE PROBE (EARTH SIDE) OF MEASURING EQUIPMENT AS FOLLOWS.
PRIMARY SIDE ..... D001 (–)
SECONDARY SIDE..... TP2
NOTE 2. THE DC VOLTAGE INDICATED IN PRIMARY SIDE IS MEASURED WHEN INPUT AC 220V IS APPLIED.
THE MEASUREMENT MODE OF DC VOLTAGE ON THIS DIAGRAM IS POWER-ON IN CONDITION THAT DC OUT IS CONNECTED TO THE MOVIE.
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.


FRONT C.B.A. (VEP60294A)
MAIN C.B.A. (VEP81101A)
IC101
VCR0358
Q101
2SK1096M
L102
VLQ0571
L301
VLQ0440
P101
P301
GND
LED (PC)
LED (CC)
LED (OP)
EXT BATT
VTR BATT
VTR 12V
GND
DC301
VJJ0245
DC302
VTR BATT
VTR 12V
GND
D301
GL3KD8
D302
GL3HD18
D303
MA4300M
D304
MA4300M
D103
ERC81-004
D104
ERC81-004
D105
RMPG06GPKG3
D106
RMPG06GPKG3
D107
RMPG06GPKG3
IC1-1
IC1-2
IC1-3
IC1-4
IC2-1
IC2-2
IC3-1
IC3-2
IC3-3
IC4
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
TH101
150K
TH102
50K
VR101
10K
CHARGE CURRENT
TP1
(24V)
(12V)

7	8	9	10	11	12

6. EXPLODED VIEWS

❶ CHASSIS & FRAME SECTION



7. MECHANICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VKM1979	TOP COVER	1	
2(1)		VKM1978	BOTTOM COVER	1	
3(1)		VMP2469	SW ANGLE	1	
4(1)		VCH2273	NAME PLATE	1	
5(1)		VYP2955	FRONT PANEL UNIT	1	
6(1)		VSC2983	BOTTOM SHIELD	1	
7(1)		VMZ2018	BOTTOM BARRIER	1	
8(1)		VSC2982	TOP SHIELD	1	
9(1)		VMZ2017	TOP BARRIER	1	
10(1)		EST15317S	POWER SWITCH	1	
11(1)		VEK6188	AC POWER CORD UNIT	1	VW-AM10E
11(1)		VEK6189	AC POWER CORD UNIT	1	VW-AM10A
11(1)		VEK6160	AC POWER CORD UNIT	1	VW-AM10B
12(1)		VMZ0580	POWER SWITCH COVER	1	
13(1)		VSF0107C25	FUSE	1	VW-M10E/A
13(1)		XBA2C25TB0	FUSE	1	VW-M10B
14(1)		VMZ0429	FUSE COVER	1	
22(2)		VJA0180	BATTERY PACK	1	
			CHARGING CONNECTOR		
23(2)		VJA0573	DC INPUT CABLE	1	

8. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.Printed circuit board assembly with mark(NLA) is no longer available after discontinuation of the product.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP61101A	MAIN C.B.A.	1	(NLA)
					INCLUDING THE
					PRIMARY WINDING
					C.B.A. (VEP60282A).
		VEP60282A	PRIMARY WINDING C.B.A.	1	(NLA)
					INCLUDED IN MAIN
					C.B.A.(VEP61101A).
		VEP60294A	FRONT C.B.A.	1	(NLA)
	■	VEP61101A	MAIN C.B.A.		(NLA)
			CAPACITORS		
C002		ECQU2A104MV	P.CAPACITOR 250V 0.01U	1	<!>
C003,04		VCC0022	C.CAPACITOR 1000P	2	<!>
C005		VCC0019	C.CAPACITOR 330P	1	<!>
C006		ECEC2GA820CB	CAPACITOR	1	
C009		ECEA1CGE470	E.CAPACITOR 16V 47U	1	
C010		ECEA1VGE330	E.CAPACITOR 35V 33U	1	
C011		ECEA1VGE101	E.CAPACITOR 35V 100U	1	
C012		ECQV1H224JZ	P.CAPACITOR 50V 0.22U	1	
C013		ECEA1HGE010	E.CAPACITOR 50V 1U	1	
C014		VCC0019	C.CAPACITOR 330P	1	<!>
C015		ECQU2A104MV	P.CAPACITOR 250V 0.01U	1	<!>
C101		ECA1EFQ102	E.CAPACITOR 25V 1000	1	<!>
C102		ECEA1VGE101	E.CAPACITOR 35V 100U	1	
C103		ECEA1VKS100	E.CAPACITOR 35V 10U	1	
C105		ECEA1AU101	E.CAPACITOR 10V 100U	1	
C106		ECEA1CKS220	E.CAPACITOR 16V 22U	1	
C107,08		ECEA1ESN100	E.CAPACITOR 25V 10U	2	
C109		ECEA1HGER33	E.CAPACITOR 50V 0.33U	1	
C110		ECEA1CM102	E.CAPACITOR 16V 1000U	1	
C111		ECEA1CKS470	E.CAPACITOR 16V 47U	1	
C112		ECEA1EGE471	E.CAPACITOR 25V 470U	1	<!>
C113		ECKD2H101KB	C.CAPACITOR 500V 100U	1	
C114		ECQV1H473JZ	P.CAPACITOR 50V 0.047U	1	
C201		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C202		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C203		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C204		ECUM1E1042FN	C.CAPACITOR CH 25V 0.1U	1	
			DIODES		
D001		D3SBA60	DIODE	1	<!>
D003,04		RMPG06GPKG3	DIODE	2	
D006		MA427CM	DIODE	1	
D007		MA430CM	DIODE	1	
D008		MA4062M	DIODE	1	
D101		PML12SPLF609	DIODE	1	
D102		RMPG06GPKG3	DIODE	1	
D103,04		ERC81-004	DIODE	2	
D105-07		RMPG06GPKG3	DIODE	3	
D201		MA3056-M	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			INTEGRATED CIRCUITS		
IC001		VCR0297	IC	1	<!>
IC101		VCR0358	IC	1	
IC201		M51978FP	IC	1	
			COILS		
L001		ELF18D293C	COIL 29MH	1	<!>
L002		ELF18D296A	COIL	1	<!>
L101		VLQEL06F680K	COIL 68UH	1	
L102		VLQ0571	COIL	1	
L103		VLP0106	COIL	1	
			CONNECTORS		
P101		VJS1629	CONNECTOR(FEMALE)	1	
P201		VJR0630	CONNECTOR	1	
			PHOTO COUPLERS		
PHC001		PS2561L1V1	PHOTO COUPLER	1	<!>
			TRANSISTORS		
Q101		2SK1096-M	TRANSISTOR	1	
			COMBINATION PARTS		
QR201		UN2117	TRANSISTOR-RESISTOR	1	
QR202		UN2212	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R001,02		ERDS2TJ474	C.RESISTOR 1/4W 470K	2	
R003-05		ERDS2TJ823	C.RESISTOR 1/4W 82K	3	
R006		ERDS2TJ273	C.RESISTOR 1/4W 27K	1	
R007		ERDS2TJ563	C.RESISTOR 1/4W 56K	1	
R008		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R012		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R014		ERDS2TJ4R7	C.RESISTOR 1/4W 4.7	1	
R015		ERDS2TJ330	C.RESISTOR 1/4W 33	1	
R102-05		ERDS2TJ272	C.RESISTOR 1/4W 2.7K	4	
R201		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R202		ERJ6GMYF333	M.RESISTOR CH 1/10W 33K	1	
R203		ERJ6GMYF183	M.RESISTOR CH 1/10W 18K	1	
R204		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R205		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R206		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
			TRANSFORMERS		
T001		VLT0597	TRANSFORMER	1	<!>
			THERMISTORS		
TH101		ERTD2ZHL154S	THERMISTOR	1	
TH102		ERTD2ZHL503S	THERMISTOR	1	
			VARIABLE RESISTORS		
VR101		EVN3ACA00B14	V.RESISTOR 10K	1	
			SURGE ABSORBERS		
ZNR001		ENB461D5ATUB	SURGE ABSORBER 460V	1	<!>
			MISCELLANEOUS		
		VMP2481	FIXING ANGLE	1	
		VMZ1361	CAPACITOR TUBE	4	
		VMZ1512	INSULATION SHEET	2	
		VSC2984	HEAT SINK	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP60294A	FRONT C.B.A.		(NLA)
			CAPACITORS		
C301,02		ECQV1H473JZ	P.CAPACITOR 50V 0.047U	2	
C303		ECEA1EKS220	E.CAPACITOR 25V 22U	1	
C304		ECCF1H101JC	C.CAPACITOR 50V 100P	1	
C305		ECQV1H224JZ	P.CAPACITOR 50V 0.22U	1	
			DIODES		
D301		GL3ED8	DIODE	1	
D302		GL3HD18	DIODE	1	
D305,06		MA4300M	DIODE	2	
			JACKS		
DC301		VJJ0248	DC JACK	1	
DC302		VJJ0293	DC JACK 3P	1	
			COILS		
L301		VLQ0440	COIL	1	
			CONNECTORS		
P301		VJP1629	CONNECTOR (MALE)	1	
			RESISTORS		
R301		ERDS2TJ472	C.RESISTOR 1/4W 4.7K	1	
R302		ERDS2TJ681	C.RESISTOR 1/4W 680	1	
			MISCELLANEOUS		
		KL04	LED SPACER	2	